

Comparative Study to Determine the Prevalence and Socio-Cultural Practices of Infertility in Rural and Urban Field Practice Area of Tertiary Care Hospital, Vijayapura, Karnataka

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Abstract

Background: Infertility is an iceberg phenomenon where the majority of couples are undiagnosed. The main challenge in estimating the actual burden of infertility is the paucity of population-based studies. Various sociocultural practices such as believing infertility as curse and seeking healing from supernatural powers are still predominant in the community. Hence, the present study was undertaken to know the prevalence and sociocultural practices of infertility in field practice area. **Materials and Methods:** A cross-sectional study was conducted in rural and urban field practice areas of tertiary care hospital. A complete enumeration of all the houses was done to list all the eligible couples residing in the area; among them, those at risk of pregnancy were identified so as to find out couples with either primary or secondary infertility. Data were tabulated and analyzed using the SPSS software version 16. The results were expressed in terms of percentages, and Fisher's exact test was used wherever applicable. **Results:** The prevalence of infertility in rural area was 7.6% and in urban slum, it was 8.8%. Most of them think infertility as a result of past sins and practice unscientific methods to overcome the problem. **Conclusion:** Infertility stigma is high and there is no proper knowledge about infertility, fertile period and most of them think it as result of past sins.

Keywords: Infertility, prevalence, sociocultural practices

INTRODUCTION

Infertility is perceived as a problem across all cultures and societies. It varies from country to country and from cohort to cohort. The operational definition of primary infertility, according to the WHO, is the lack of conception despite cohabitation and exposure to the risk of pregnancy (in the absence of contraception) for a period of 2 years or more. Whereas secondary infertility is defined as the failure to conceive following a previous pregnancy despite cohabitation and exposure to the risk of pregnancy (in the absence of contraception, breastfeeding, or postpartum amenorrhea) for a period of 2 years or more.^[1]

As per the WHO, in the year 2012, one in every four couples in developing countries had been found affected by infertility. According to the District Level Household and Facility Survey (DLHS), Karnataka, infertility in rural area was 6.1% as compared to urban area which was 5.5%.^[2]

In developing countries, the consequences due to infertility range from economic hardship to social isolation and violence. Many families depend on children for economic survival, especially in old age. The infertile couple stops attending family celebrations and religious functions. Various sociocultural practices such as believing infertility as a curse and seeking healing from supernatural powers are still predominant in the community.

The main challenge in estimating the actual burden of infertility is the paucity of population-based studies. Hence, the present

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study was undertaken to know the prevalence and sociocultural practices of infertility in field practice area.

Objectives

1. To determine and compare the prevalence of infertility in rural and urban field practice areas
2. To assess and compare the sociocultural practices associated with infertility.

MATERIALS AND METHODS

This was a descriptive, observational, cross-sectional study. It was conducted in field practice area of Shri B M Patil Medical College, Vijayapur, Karnataka, and the study period was April 2015–March 2016.

A complete enumeration of all the houses covered under Rural Health Training Centre and Urban Health Training Centre was done to list all the eligible couples residing in the area; those women at risk of pregnancy were identified so as to find out couples with either primary or secondary infertility. House-to-house survey was done covering all the participants coming under the field practice area so as to completely enumerate the eligible couples.

The total population covered under the study in rural area was 12,000 among 1800 houses, and 1200 houses were accessed in the urban field practice area, catering a population of 10,000.

The prevalence of infertility in women is defined as the percentage of women of reproductive age (15–49 years) at risk of becoming pregnant (not pregnant, sexually active, not using contraception, and not lactating) who report trying for a pregnancy for 2 years or more.

Prevalence of infertility =

$$\frac{\text{Number of women of reproductive age (15-49 years) at risk of becoming pregnant who report trying unsuccessfully for a pregnancy for 2 years or more}}{\text{Total number of women of reproductive age at risk of becoming pregnant}} \times 100$$

The number of eligible couples covered under the study was 2650. The data were compiled in Microsoft Excel-2010 worksheet and were analyzed using Statistical Package for the Social Sciences software version 16.0 (IBM, Vijayapura, Karnataka, India). The data were presented in the form of tables and graphs. Chi-square/Fisher's exact test was applied to know the association between sociodemographic variables related to infertility.

After obtaining ethical clearance from the institutional ethical committee, the study was conducted. The purpose and overview of the study was explained to the participants, and verbal consent was obtained from them. By interview technique using pretested, predesigned, semi-structured questionnaire, the data were collected.

RESULTS

The result of the present study shows that the overall prevalence of infertility in rural areas and urban slum was 7.6% and 8.8%, respectively. The prevalence of primary infertility (5.3% in rural and 5.7% in urban slum) was on the higher side compared to secondary infertility (2.3% in rural and 3.1% in urban slum).

In rural area, the number of eligible couples where women are at risk of pregnancy was 693. Among them, 53 were infertile couples, with primary infertility in 37 and secondary infertility in 16 couples. In urban area, the number of eligible couples

Table 1: Association of sociodemographic variables of women with primary infertility with area of residence

Variables	Frequency (%)		χ^2	P
	Rural (n=37)	Urban (n=24)		
Age				
20-29	31 (84)	15 (62)	3.74	0.154
30-39	4 (11)	5 (21)		
40-49	2 (5)	4 (17)		
Religion				
Hindu	34 (92)	19 (80)	2.07	0.15
Muslim	3 (8)	5 (20)		
Type of family				
Joint	23 (62)	09 (37)	3.55	0.06
Nuclear	14 (38)	15 (63)		
Educational status				
Illiterate	11 (30)	0	11.8	0.01
Primary school	5 (13)	7 (29)		
High school	10 (27)	6 (25)		
PUC	5 (13)	8 (33)		
Degree	6 (16)	3 (12)		
Type of occupation				
Homemaker	31 (84)	14 (58)	4.87	0.02
Employed	6 (16)	10 (42)		
SES				
Class I	5 (13)	0	4.8	0.3
Class II	6 (16)	7 (29)		
Class III	15 (41)	8 (33)		
Class IV	7 (19)	6 (25)		
Class V	4 (11)	3 (12)		
Duration of infertility (years)				
<5	17 (46)	10 (42)	1.52	0.46
5-9	14 (38)	7 (29)		
10-20	6 (16)	7 (29)		
Family history of infertility				
Yes	5 (14)	3 (12)	1.3	0.90
No	32 (86)	21 (88)		
History of consanguineous marriage				
Yes	15 (41)	6 (25)	1.56	0.212
No	22 (59)	18 (75)		
Total	37 (100)	24 (100)		

SES: Socioeconomic status, PUC: Preuniversity course

where women are at risk of pregnancy was 419. Among them, 37 were infertile couples, with primary infertility in 24 and secondary infertility in 13 couples [Table 1]. Age distribution with primary infertility showed that the majority of the participants belong to the most fertile age group. A majority of the couples belong to Hindu religion in rural and urban areas. In rural area, 62% of them belong to joint family, whereas in urban area, 63% belong to nuclear family.

The majority of the women in rural area are illiterates (30%). In primary infertile women, a significant difference was found between the level of education and occupation with place of residence ($P < 0.05$). Couples with duration of infertility < 5 years constituted 46% and 42% in rural and urban areas, respectively. Women with a family history of infertility were almost similar in rural and urban areas. History of consanguineous marriage was more commonly observed in rural areas.

Age distribution of women with secondary infertility showed that majority belongs to the age group of 30–39 years in rural area and 20–29 years in urban area [Table 2]. A majority of women with secondary infertility in both rural and urban areas were Hindu by religion; among secondary infertile women, significant difference was found between religion and place of residence ($P < 0.05$).

The major proportion of the couple belonged to nuclear family (56%) in rural areas and in urban area, it was a three-generation family (46%). Illiteracy was observed only among rural women (31%). Around 75% and 62% of the women were homemakers in rural and urban areas, respectively. A significant association was observed between occupation and place of residence among secondary infertility women ($P < 0.05$).

Majority of the couples belonged to upper class in both rural and urban areas. Majority of the couples (56%) had duration of infertility 10–20 years in rural area and 15% in urban area. A significant difference was found between duration of infertility and place of residence ($P < 0.05$). Family history of infertility was around 15% among urban residents and 6% among rural participants. History of consanguineous marriage was similar for rural and urban residents (31%).

Almost all participants practiced one or the other method of cultural practices [Table 3]. A significant difference was found between cultural practices and area of residence ($P < 0.0001$).

DISCUSSION

A community-based, cross-sectional study was conducted to know the overall prevalence of infertility in field practice area. The prevalence of infertility in a rural area in our study is in line with the DLHS 2008 Karnataka report, where it was 7.6% in rural area and 7.3% in urban area, which is slightly on the lower side compared to our study. This shows that there is a increase in the prevalence of infertility in the urban area, which is of great concern.^[2]

Table 2: Association of sociodemographic variables of women with secondary infertility with area of residence

Variables	Frequency (%)		χ^2	<i>P</i>
	Rural (<i>n</i> =16)	Urban (<i>n</i> =13)		
Age				
20-29	4 (25)	7 (54)	3.03	0.22
30-39	8 (50)	5 (38)		
40-49	4 (25)	1 (8)		
Religion				
Hindu	16 (100)	09 (69)	5.71	0.01
Muslim	0	04 (31)		
Type of family				
Joint	03 (19)	4 (31)	3.27	0.19
Nuclear	09 (56)	3 (23)		
Three-generation family	04 (25)	6 (46)		
Educational status				
Illiterate	05 (31)	0	5.03	0.28
Primary school	3 (19)	3 (23)		
High school	5 (31)	6 (46)		
PUC	2 (12)	3 (23)		
Degree	1 (6)	1 (8)		
Type of occupation				
Homemaker	12 (75)	8 (62)	6.2	0.04
Unskilled	1 (6)	5 (38)		
Semi-skilled	3 (19)	0		
SES				
Upper class	13 (81)	7 (54)	2.52	0.11
Lower class	3 (19)	6 (46)		
Duration of infertility (years)				
<5	1 (6)	7 (54)	9.86	0.02
5-9	5 (31)	04 (31)		
10-20	9 (56)	2 (15)		
>20	1 (6)	0		
Family history of infertility				
Yes	1 (6)	2 (15)	0.64	0.42
No	15 (94)	11 (85)		
History of consanguineous marriage				
Yes	5 (31)	4 (31)	0.77	0.97
No	11 (69)	9 (69)		
Total	16 (100)	13 (100)		

SES: Socioeconomic status, PUC: Preuniversity course

In a study conducted in Ambala, Haryana, the prevalence of primary and secondary infertility was 6.1% and 5.7%, respectively, in urban field practice area of a tertiary care hospital, which is higher when compared to our study.^[3]

Slightly higher side of prevalence in the urban area may be due to the fact that our study was conducted in a socioeconomically backward urban slum area where undergoing treatment is a huge burden on the economic condition of the family compared to rural residents. This also shows that the prevalence of infertility varies according to social, cultural, and economic background.

Table 3: Distribution of infertile couples, according to various sociocultural practices

Sociocultural practices*	Frequency (%)		Total
	Rural	Urban	
Visiting religious places	103 (58)	74 (42)	177 (100)
Wearing tavisz/threads	9 (45)	11 (55)	20 (100)
Astrologers	27 (55)	22 (45)	49 (100)
Rituals	49 (79)	13 (21)	62 (100)
Others	16 (100)	0	16 (100)

*Multiple responses, $\chi^2=2.21$, $P<0.0001$

Even though there is no much difference in the prevalence of primary infertility, there is an increase in the level of secondary infertility in both rural and urban areas; this can be attributed to the fact that first child matters a lot and less importance is given to the second child; hence, they do not seek treatment also which, in turn, leads to a high prevalence of secondary infertility.

It was found that the majority of the participants belonged to the age group of 20–29 years (44%) in both rural and urban areas. Similar results were observed by Adamson *et al.*, in Mysore, where majority of the couples belonged to 20–29 years' age group (56%).^[4] A study done by Sudha *et al.* also observed that 42% of the women were under 25 years of age.^[5] This might be due to the fact that as the age advances the proportion of people seeking treatment for having children will also increase.

Our study observed that the majority of the couples belonged to Hindu religion. As reported by Manna *et al.*, in West Bengal, a major proportion of the infertile couples belonged to Hindu religion (82%).^[6] The higher proportion of Hindus in our study may be because of their predominant inhabitation in this region, and also this variation can be attributed to the differences in the way of living, customs, traditions, and habits.

In our study, 46% of the couples belonged to nuclear type of family, which was similar to a study conducted by Shamila and Sasikala.^[7] This could be due to factors such as change in the generation, thinking of living independently, and self-decision. This itself may lead to stress to manage multiple tasks and which is one of the reasons affecting infertility.

Manna *et al.* reported that high infertility rate was observed among illiterates (20%), whereas only 2% of them were graduated.^[6] Our study revealed that comparatively the number of illiterates were high from rural area, highlighting the fact that illiteracy is still predominant among rural residents.

In the present study, majority of the couples with infertility belonged to Class III socioeconomic status (SES) (42%) in both rural and urban areas. Similar findings were reported by Maha *et al.*, where most of the infertile couples (57%) belonged to Class III SES.^[8] Mittal *et al.* reported that infertility was most prevalent among participants belonging to Class III SES.^[3] This reflects that middle-class families cannot afford the expenditure for the treatment of infertility.

In the present study, majority of the female participants were homemakers (72%) in both rural and urban areas. In the study by Shamila and Sasikala^[7] among infertile women, 23% of them were employed and the remaining were homemakers. Among those working, majority were working at lower positions.

Hence contradicting the fact that working women are 20% more likely to be infertile compared to nonworking women as stated in NFHS data^[9] but our study was a community-based study and conducted in socioeconomically backward urban slum and in a rural area, we could not find any significant association in relation to the type of occupation.

Around 39% of the couples had 2–5 years of duration of infertility. The distribution was similar among rural and urban participants, where a major proportion of the respondents had infertility <5 years followed by 5–9 years of infertility. Similar results were obtained by Shamila and Sasikala.^[7]

A study conducted by Obuna *et al.* on Southeast Nigerians also showed that majority of the infertile couples had a duration of 1–5 years (46%) of infertility.^[10] This may be due to the fact that, as the duration of married life increases, some couples may seek treatment for infertility or some may conceive spontaneously, which might be the same reason for the duration of infertility.

In our study, 12% and 33% of the participants had a family history of infertility and history of consanguineous marriage, respectively. When compared between rural and urban participants, family history of infertility (54%) and consanguinity (67%) were more common among rural participants. Similar results were reported by Shamila and Sasikala.^[7]

Wearing threads/tavisz was found more prevalent among urban participants as Muslim populations were predominant in the study area. In rural areas, couples with secondary infertility had the practice of not cutting the hair of the first child unless they have the second child.

Couples seek varied traditional methods and religious practices, including visits to temples, abstaining from visiting a place where a woman has delivered a child, observing tantric rites, wearing charms, participating in rituals, and visiting astrologers as reported by Desai.^[11]

Despite their affiliation with modern treatment, people still believe that the remedy for childlessness ultimately depends on God.

CONCLUSION AND RECOMMENDATION

The prevalence of infertility was higher among urban residents compared to rural residents. Visiting religious places was the most common cultural practice among both rural and urban residents. Field-based studies should be encouraged to know the burden of infertility and its consequences. The provision of health education as an integral part of infertility management

into reproductive health-care programs is needed. Increase in female literacy and counseling helps them to overcome the stigma.

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Conflicts of interest

There are no conflicts of interest.

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